

REMARKS

By this Amendment, claims 1-5 are amended, and claims 6-9 are added. Thus, claims 1-9 are active in the application. Reexamination and reconsideration of the application are respectfully requested.

I. Revisions to the Specification

Minor editorial revisions have been made to the specification to improve its English grammar and U.S. form, and to remove typographical errors. The revisions to the specification do not add new matter. Accordingly, entry of the revisions to the specification is respectfully requested.

II. Claim Objections

In item 4 on page 2 of the Office Action, claims 1-5 were objected to for containing undefined acronyms. Claims 2-5 have each been amended to delete the acronyms recited therein and to instead recite the definitions of each acronym. For instance, claim 2 has been amended to recite "a program clock reference PCR extractor" and "a system time clock STC recoverer." In view of the amendments to claims 2-5 defining each acronym recited therein, the Applicants respectfully request that the objection to claims 1-5 be withdrawn.

III. Art Rejection

In item 6 on page 3 of the Office Action, claims 1-5 were rejected under 35 U.S.C. § 102(e) as being anticipated by Hemkumar et al. (U.S. 6,356,871, hereinafter "Hemkumar").

This rejection is respectfully traversed for the following reasons. Furthermore, the Applicants respectfully submit that this rejection is inapplicable to new claims 6-9 for the following reasons.

The present invention provides a storage-type data broadcast service system for transmitting a first transport stream constituting at least one content and containing a plurality of packet data having a program clock reference as reference clock information when reproducing the content, at a second transfer rate different from a first transfer rate,

which is determined by the reference clock information, and extracting the plurality of packet data composing the content from the transmitted transport stream to generate and store a second transport stream.

In particular, as recited in claim 1, the present invention provides that a first transport stream transmitted at a second rate different from a first transfer rate is received by a receiver of the system, and a second transport stream is generated based on a transfer rate ratio between the first transfer rate and the second transfer rate.

The Examiner contends that Hemkumar discloses this feature of the present invention. However, Hemkumar fails to disclose or suggest that a transport stream is generated based on a transfer rate ratio between a first transfer rate and a second transfer rate.

Hemkumar merely discloses a system for synchronizing stream processing with a locally generated system time clock. In particular, Hemkumar discloses that when a transport stream is created, a program clock reference (PCR) is inserted into the packet stream. The PCR is a time stamp indicating the then current time with reference to a system time clock (STC) base against which the data was encoded into the transport stream. The PCR is used to synchronize corresponding system time clocks in video and audio decoders. Hemkumar also discloses that a presentation time stamp (PTS) is inserted into blocks of compressed audio and video data to indicate when the blocks of data are to be played (presented) to the viewing audience.

However, due to unpredictable and varying decompression (decode) times caused by diverse compression algorithms, Hemkumar discloses that decoding of some blocks may run behind or ahead of the time that they are supposed to be decoded, according to the PTS inserted into the compressed data. To prevent such untimely decoding of data, Hemkumar discloses that a PCR is recovered from a transport layer of compressed data and is used in varying the frequency of a locally generated system time clock. Hemkumar discloses that a PTS is recovered from a transport layer and is compared against a current sample of data be streamed relative to the local STC.

Therefore, Hemkumar merely discloses a system for detecting instances when a processing device (decoding device) is running ahead of or behind where it should be according to a PTS included in the transport layer of data. Specifically, in Column 12,

lines 24-52, Hemkumar discloses that a decoder uses an initial PCR value to load a STC counter, which is incremented or decremented based on each PCR included in the received audio or video data. If the current value in the STC counter is not synchronized with the PCR, the value of the STC counter is increased or decreased so as to match the PCR of the data that is to be decoded. The value of the STC counter is adjusted until it matches the PCR of the data.

Accordingly, Hemkumar merely discloses that the value of an internal clock is adjusted to match PCR of data that is to be decompressed. Adjusting the value of a clock to match a time stamp of data to be decompressed, however, clearly does not result in receiving a first transport stream transmitted at a second rate different from a first transfer rate, and generating a second transport stream based on a transfer rate ratio between the first transfer rate and the second transfer rate, as recited in claim 1.

Similarly, adjusting the value of a clock to match a time stamp of data to be decompressed does not result in a receiver operable to detect a transfer rate ratio between the first transfer rate and the second transfer rate to generate the second transport stream based on the detected transfer rate ratio, as recited in new claim 6.

In point of fact, Hemkumar does not disclose, suggest or even contemplate that a transfer rate ratio between a first transfer rate and a second transfer rate is even considered in determining whether an internal clock matches a time stamp of data to be decompressed.

Therefore, Hemkumar clearly does not disclose or suggest each and every limitation of claims 1 and 6.

Consequently, claims 1 and 6 are clearly not anticipated by Hemkumar since Hemkumar fails to disclose each and every limitation of claims 1 and 6.

Furthermore, in view of the clear distinctions discussed above, one skilled in the art would not have been motivated to modify Hemkumar in such a manner as to result in, or otherwise render obvious, the inventions of claims 1 and 6.

Therefore, the Applicants respectfully submit that claims 1 and 6 are clearly patentable over Hemkumar.

Notwithstanding the clear patentability of independent claims 1 and 6, the Applicants respectfully submit that Hemkumar also fails to disclose or suggest each and every limitation of dependent claims 2-5 and 7-9.

Claims 2 and 7 recite that a correction factor for correcting a program clock reference so as to match the second transfer rate is derived based on the transfer rate ratio between the first transfer rate and the second transfer rate, and a system clock is recovered based on the program clock reference corrected by the correction factor.

In contrast, Hemkumar fails to disclose or suggest this limitation of claims 2 and 7.

Claims 3 and 8 recite that a correction factor for correcting an extracted program clock reference so as to match the second transfer rate is derived based on the extracted program clock reference and the recovered system time clock, and a system time clock is generated based on the program clock reference corrected by the correction factor.

In contrast, Hemkumar fails to disclose or suggest this limitation of claims 3 and 8.

Claims 4 and 9 recite that a specifier for extracting a reference clock transmitted at the first transfer rate as a standard program clock reference is provided, and a system time clock is recovered based on the standard program clock reference.

In contrast, Hemkumar fails to disclose this limitation of claims 4 and 9.

Claim 5 recites that a transfer rate ratio appender for assigning the transfer rate ratio to the first transport stream is provided, a correction factor for correcting the program clock reference so as to match the second transfer rate is derived, and a system time clock is recovered based on the program clock reference corrected by the correction factor.

In contrast, Hemkumar fails to disclose or suggest this limitation of claim 5.

That is, an object of the present invention is, without re-encoding a transport stream, to properly recover a system time clock even when distributed at a bit stream transfer rate which is different from the original bit stream transfer rate. In order to attain the object mentioned above, the present invention has a construction of a program clock reference corrector, a program clock reference correction factor calculator, etc. However, Hemkumar fails to disclose or suggest these features of the present invention.

Because of the clear distinctions discussed above, it is submitted that the teachings of Hemkumar clearly do not meet each and every limitation of claims 1-9.

Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify Hemkumar in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-9.

Therefore, it is submitted that the claims 1-9 are clearly allowable over the prior art as applied by the Examiner.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

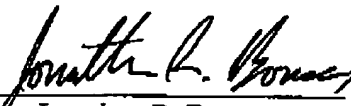
If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

A fee and a Petition for a two-month Extension of Time are filed herewith pursuant to 37 CFR § 1.136(a).

Respectfully submitted,

Yohei KAWABATA et al.

By:


Jonathan R. Bowser
Registration No. 54,574
Attorney for Applicants

JRB/nrj
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
November 6, 2006